

### PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AND EXCHANGE DRIVE IN CARROLL COUNTY. MD 26 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

### INITIAL INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A FLASHING MODE WITH MD 26 INDICATIONS FLASHING YELLOW AND THE SIDE STREET INDICATIONS FLASHING RED.

### FUTURE INTERSECTION OPERATION

WHEN THE PROPOSED DEVELOPMENT GENERATES ADEQUATE TRAFFIC VOLUMES, THE FULL TRAFFIC SIGNAL WILL BE TURNED ON AND OPERATE IN A NEMA FOUR-PHASE, FULLY-ACTUATED MODE WITH AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE FOR EASTBOUND MD 26.

### CONTROLLER REQUIREMENTS

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1), FOUR-CHANNEL, TIME-DELAY-OUTPUT DETECTOR AMPLIFIER AND VIDEO DETECTION INTERFACE EQUIPMENT HOUSED IN A NEMA "6" BASE MOUNTED CABINET.

### SPECIAL NOTE

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF THE MSHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR MUST PROVIDE MR. SNYDER WITH THE NEAREST ADDRESS, ZIP CODE, AND PHONE NUMBER.

### EQUIPMENT LIST "A"

A. EQUIPMENT TO BE FURNISHED BY THE SHA AND INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
NONE		

### EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR. ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED TO THE OFFICE OF TRAFFIC AND SAFETY FOR APPROVAL PRIOR TO INSTALLATION.

QUANTITY	DESCRIPTION
LS	MAINTENANCE OF TRAFFIC
4 CY	TEST PIT EXCAVATION
150 LF	24 IN. WHITE HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LINE
1 EA	CONTROLLER AND CABINET - BASE MOUNT
1 EA	VIDEO INTERFACE EQUIPMENT
1 EA	FOUR-CHANNEL TIME- DELAY-OUTPUT LOOP DETECTOR AMPLIFIER
22 EA	12 INCH LED SIGNAL HEAD SECTION
3 EA	8 INCH LED SIGNAL HEAD SECTION
15 CY	CONCRETE FOUNDATION FOR SIGNAL
1 EA	27 FT. MAST ARM POLE & 50 FT. MAST ARM
1 EA	27 FT. MAST ARM POLE & 60 FT. MAST ARM
1 EA	27 FT. MAST ARM POLE & 60 FT. MAST ARM
2 EA	16 FT. LIGHTING ARM WITH 250 WATT HPSV LUMINAIRE
9 EA	ELECTRICAL HANDHOLE
150 LF	2 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - TRENCHED
30 LF	3 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - TRENCHED
180 LF	3 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT- BORED
970 LF	4 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT - TRENCHED
300 LF	4 IN. SCHEDULE 80 RIGID PVC ELECTRICAL CONDUIT- BORED
2 EA	VIDEO DETECTION CAMERA AND CABLE
135 LF	WOOD SIGN SUPPORTS 4 IN. X 6 IN.
1 EA	METERED SERVICE PEDESTAL EMBEDDED
80 LF	ELECTRICAL CABLE 1 - CONDUCTOR (NO. 4 A.W.G.) - THHN /THWN
80 LF	ELECTRICAL CABLE 5 - CONDUCTOR (NO. 14 A.W.G.)
700 LF	ELECTRICAL CABLE 7 - CONDUCTOR (NO. 14 A.W.G.)
390 LF	ELECTRICAL CABLE 2 - CONDUCTOR (NO. 12 A.W.G.)
320 LF	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
6 EA	3/4 IN. X 10 FT. GROUND ROD
4 EA	NON-INVASIVE MICRO-LOOP PROBE
1 EA	D3-2 (VAR X 16") DUAL FACE SIGN - MAST ARM MOUNT
2 EA	D3-2 (VAR X 30") SIGN - GROUND MOUNT
2 EA	R3-5L (30" X 36") SIGN - MAST ARM MOUNT
1 EA	M95-1/ D3-2 (78" X 40") SIGN - MAST ARM MOUNT
2 EA	W3-3 (48" X 48") SIGN W/NEW PANEL" (30" X 30") SIGN - GROUND MOUNT

### EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

ITEM NO.	QUANTITY	DESCRIPTION
NONE		

ALL SIGNAL EQUIPMENT TO BE REMOVED AND NOT RETURNED TO THE SHA SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

### CONTACT PERSONS FOR DISTRICT 7 ARE AS FOLLOWS:

MR. JOHN CONCANNON  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
(301) 624-8140/8141

MS. ANDREA ABEND  
UTILITY ENGINEER  
(301) 624-8115/8116

MR. RICHARD DAFF, SR.  
CHIEF, TRAFFIC OPERATIONS  
(410) 787-7630

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF,  
TRAFFIC OPERATIONS  
(410) 787-7631

MR. ED RODENHIZER  
CHIEF - SIGNAL OPERATIONS SECTION  
(410) 787-7652

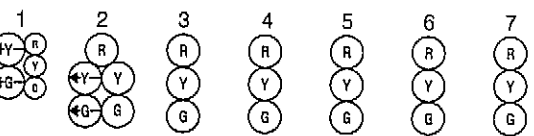
MR. RAYMOND F. JOHNSON  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
(301) 624-8105/8106

MR. EUGENE BAILEY  
CHIEF OF SIGN OPERATIONS  
(410) 787-7676

MS. DARLENE EIDE  
CHIEF  
SIGNAL SHOP WAREHOUSE  
(410) 787-7666

### PHASE CHART

INITIAL OPERATION



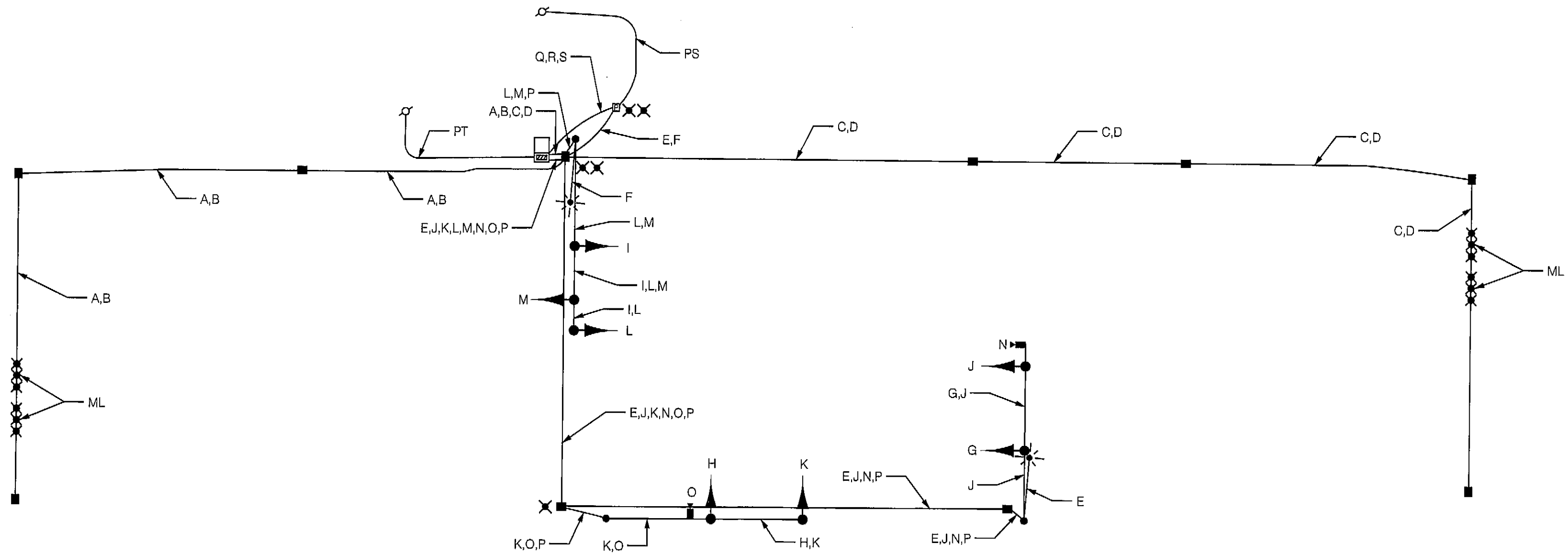
FLASHER OPERATION	FLY	FLY	FLY	FLY	FLY	FLR	FLR	

### PHASE CHART

FUTURE OPERATION

PHASE 1 & 6	←	←	G	R	R	R	R	
1 CHANGE	←	←	G	R	R	R	R	
PHASE 2 & 6	G	G	G	G	G	R	R	
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	
PHASE 4	R	R	R	R	R	G	G	
4	R	R	R	R	R	Y	Y	
FLASHER OPERATION	FLY	FLY	FLY	FLY	FLY	FLR	FLR	

### WIRING DIAGRAM



### WIRING KEY

A-D	MICRO-LOOP PROBE LEAD-IN
E-F	2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TRAY CABLE
G-I	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
J-M	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
N,O	VIDEO DETECTION CABLE
P	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
Q-S	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
ML	MICRO-LOOP PROBE
PS	PROPOSED ELECTRIC SERVICE
PT	PROPOSED TELEPHONE SERVICE
X	GROUND ROD
Ⓜ	METER SERVICE PEDESTAL

### GENERAL NOTES

- THE LOCATION OF PROPOSED GEOMETRICS MUST BE CONFIRMED PRIOR TO THE INSTALLATION OF SIGNAL EQUIPMENT.
- CONDUIT SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF PAVEMENT MARKINGS.
- ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY PRIOR TO THE CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 816.01, MD 816.02, MD 816.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- THESE PLANS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL. SHOULD CONSTRUCTION NOT BEGIN WITHIN THIS TIME FRAME THESE PLANS SHALL BE NULL AND VOID WITHOUT A REVIEW FROM THE TRAFFIC ENGINEERING DESIGN DIVISION.

**T**RAFFIC **C**ONCEPTS, INC.

325 Gambrills Road  
Suite B  
Gambrills, MD 21054

(410) 923-7101

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EMAIL: TRAFFIC@TRAFFIC-CONCEPTS.COM



STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION

### GENERAL INFORMATION PLAN

MD 26 AND EXCHANGE DRIVE  
(FREEDOM, MARYLAND)

SCALE NONE DATE 4-28-10 CONTRACT NO. BW996M82

DESIGNED BY T. ZAYDEL COUNTY CARROLL  
DRAWN BY T. ZAYDEL LOGMILE 06002608.28  
CHECKED BY K. SCHMID T.I.M.S. NO.  
F.A.P. NO. NA TGD-NGS

DRAWING NO. TS-4760 GI SHEET NO. 2 OF 2